PLAYING AMENABILITY AGAINST RIGIDITY TO UNFOLD THE STRUCTURE OF II_1 FACTORS

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Abstract. I will explain a general strategy for studying type II_1 factors that proved extremely succesful in the last couple of years, and which consists in "playing amenability against rigidity", whenever some very weak versions of these properties are met. These opposing properties create enough "tension" within the algebra to unfold the entire structure. I will exemplify with three distinct types of situations and results: 1) When the II_1 factor M contains Cartan subalgebras $A \subset M$ such that $A \subset M$ satisfies an operator algebra version of the Kazhadan-Margulis relative property (T), while the equivalence relation $\mathcal{R}_{A\subset M}$ satisfies Haagerup's property. 2) When $M = R \rtimes_\sigma G$ with σ a Bernoulli shift action and G a group which contains an infinite normal rigid subgroup. 3) When M is a tensor product of "hyperbolic" factors (a recent property due to Ozawa).

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